

toneal fluid, show macroscopical lesions in the lungs very closely resembling those reported in our Fig 1—that is, minute white dots scattered through the pulmonary structure, usually localized in the neighborhood of the bronchi. Sections from these lungs, stained with hæmatoxylin, show the presence of multiple beginning adenocarcinoma of the bronchi.

These we should interpret as beginning adenocarcinoma of the lung in 4 animals, making, with our Case I., 5 animals in which the infection has been followed by infection of the bronchial epithelium. One guinea-pig presents a condition of the lungs and liver which we wish to interpret as *primary carcinoma of those organs*, and 1 dog presents a lymphoma of the spleen, the size of a large hazel-nut, which we also attribute to the inoculation of the animal with dried lymph nodes from a case of carcinoma. The tumor cells in all of these animals contain the characteristic forms of the parasite.

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1. THORACIC ANEURISM. 2. CARCINOMA OF SUPERIOR MAXILLA. 3. CHOLELITHIASIS AND SUPPURATIVE CHOLECYSTITIS. 4. INGUINAL HERNIA OF (a) BLADDER;  
(b) CÆCUM.<sup>1</sup>

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1. *Thoracic Aneurism.* This case was an aneurism of the thoracic portion of the left common carotid artery. The patient was a male, aged thirty-nine years, and came under observation in November, 1899. His general condition as regards strength, health, etc., was perfect. Previous history as regards disease of all kinds was absolutely negative.

At the age of twenty-three years, sixteen years before admission to Bellevue Hospital, he had received a pistol-shot wound in the left side of the neck, which healed without complication. Nothing developed until the fall of 1897, when a swelling was noticed under the scar, well down in the neck. From that time the swelling increased in size, slowly but steadily, and with increasing severity of pressure-symptoms, pain, dyspnoea, and coughing, which interfered with sleep and were beginning to undermine the patient's health. Medical treatment had been tried for six months, but without relief.

Examination: On inspection a swelling, about the size of a lady apple, was observed in the left side of the neck close to the sterno-

<sup>1</sup> Read before the New York Surgical Society, February 27, 1901.

clavicular articulation. Palpation showed the existence of the regular symptoms of a sacculated aneurism and also that the aneurism was slightly overlapped by the sternomastoid muscle. On gentle manipulation the overlying tissues appeared loose, while active motions of the neck in all directions were normal. Auscultation confirmed the diagnosis of aneurism and also showed a downward extension into the thorax. Pulsation in the left radial artery was synchronous with that of the heart, this probably excluding the left subclavian artery as the point of origin. There were no signs of communication with the internal jugular veins nor were any bony parts involved.

The question of treatment was now to be considered. The patient was in good condition; his arteries, heart, lungs, and kidneys were normal. As medical treatment had been unavailing, there was the choice between an operation and doing nothing, since such measures as needling and introducing wire did not seem to be indicated. Furthermore, the patient was steadily growing worse and was desirous, as were his friends, of having an operation performed, fully appreciating its possible fatal outcome. If it had been merely a question of ligation based on a definite size of the tumor there might have been less doubt as to what to do; but the somewhat indefinite limits of the aneurism certainly suggested possibilities of failure if ligation were attempted with an ordinary incision, even if the latter were deepened by removal of pieces of the sternum and clavicle. It was, therefore, decided to operate and to make an unusually large exposure of the aneurism, with the idea not only of having plenty of room for ligation, but also of possible extirpation of the sac.

The operation was performed ten days after admission and was as follows:

The incision followed the anterior border of the sternomastoid muscle, extending from its mid-point to the middle line of the sternum, crossing the sternoclavicular joint. From this point a second incision was carried outward, parallel to and just below the clavicle, well beyond the middle of the bone. The soft parts were then retracted at the apex of this triangle and at the outer end of the clavicular incision sufficiently to use a wire-saw, by which were divided first the clavicle at the point indicated, and then the sternum and cartilage of the first rib, the latter being cut through close to the former. The flap was then dissected upward and outward, the dissection being carried under the sternomastoid, which thus formed part of the flap, the bony portions being the inner half of the clavicle, the sternoclavicular joint, and the adjoining portion of the sternum.

The raising of this flap was extraordinarily difficult on account both of dense adhesions and hemorrhage, almost every cut with knife or scissors and even blunt separation of the tissues being followed by profuse venous oozing and spurting.

After the flap was raised the aneurism was found to extend mesially over the common carotid and downward under the first rib. It was also bilobed, a bit of fascia constricting it, so that the smaller part lay over the scalenus anticus muscle. The stiffness of the sac and the presence of the first rib prevented the finger from getting in under it from any direction. The rib and cartilage were then resected as far out as the subclavian vein, the constricting band removed, and adhesions separated

below. These procedures allowed a more extended palpation, which showed that the sac reached downward over the left innominate vein and that it arose neither from the aortic arch nor from the subclavian artery.

It was then determined to ligate the left common carotid, but the patient's condition forbade anything more. In clearing the sac several profuse venous hemorrhages had occurred. These, together with the previous hemorrhages and the length of time elapsed—now more than four hours—necessitated infusion and stopping the operation. The wound was packed with sterile gauze, several clamps left *in situ*, the flap brought down, and a large dressing applied.

The next morning the patient was in good condition and desired a continuation of the operation when told that it was not yet complete.

Five days later he was again etherized and the wound opened. The thin layer of granulation tissue, which had spread itself more or less completely over the parts, was wiped away and the clamps left at the first operation removed. The lower end of the left carotid was then exposed and ligated about a quarter of an inch above its origin, which was followed by immediate cessation of pulsation within the sac. This procedure, however, was one of no small difficulty, owing to adhesions and hemorrhage, and required nearly an hour's time.

Had the operation been terminated then the patient would certainly have survived and possibly made a more or less permanent recovery, provided the conditions of the wound permitted. These were somewhat difficult to deal with. The sac was now enormously enlarged and projected not only in the neck but also between the cut edges of the sternum and first rib, thus absolutely precluding any replacement of the flap as originally formed. To replace the flap would have necessitated removal of the bony portions and stretching the soft parts over the aneurism.

Primary union would have been impossible and healing could take place only by means of a long granulation process, attended by probable sepsis, to say nothing of secondary hemorrhage.

Extirpation of the sac was accordingly decided upon, and, as a preliminary step, the upper part of the artery was exposed and ligated. An attempt was then made to raise the aneurism from its bed by retracting it mesially and dissecting in under it along its outer border. After about half an hour, however, the amount of adhesions and venous hemorrhage encountered showed that removal in that way was impossible. Since the artery was tied in two places it was decided to split the sac and remove it piecemeal.

Time for infusion having been allowed, the sac was cut into and split, the upper and lower portions of the internal jugular vein having been previously sufficiently cleared of adhesions to permit clamping should it be necessary on account of a possible communication with the vein. The vein should have been ligated, but the patient's condition demanded the loss of no time.

On splitting the sac it was found to contain a quantity of laminated fibrin loosely arranged concentrically around the wall, which was thin.

During the removal of some of this fibrin a sudden violent venous hemorrhage from within the sac took place, which was stopped at once by clamping the jugular at the places prepared. The sac was then

partly cleared of blood and clot in an endeavor to find an opening into the vein.

All further investigations, however, were then brought to an end by the quiet death of the patient.

A post-mortem examination, not obtainable later, might, it is true, have been made at once, even if a trifle irregular; but, to speak frankly, disappointment at the fatal result was sufficiently keen to cause entire loss of interest.

This case is reported simply because of its general interest as touching on the question of extirpation of aneurisms. I fear that there can be but little learned from it. There was nothing in the physical signs at the examination indicative of the difficulties to be encountered. Therefore, until these thoracic aneurisms can be more accurately mapped out it would seem best either always to be prepared for adhesions and hemorrhage—which, of course, may not be found—if an operation is undertaken or not to operate at all. In this particular case no operation should have been performed, but this was certainly not positively evident, in the author's judgment, before the operation.

2. *Carcinoma of Superior Maxilla.* Male, aged forty years, came under observation early in January of this year.

The growth occupied the roof of the mouth and involved the gums and alveolar processes of both maxillæ, extending from the first molar tooth of the right side to the canine tooth of the left. It also involved the anterior half of the hard palate of the right side. The mass was soft, friable, nearly filled the mouth, and was constantly bleeding, with an offensive discharge. General health was greatly depreciated, with marked cachexia. The tumor had grown rapidly, beginning as a small lump behind one of the front teeth only eight weeks previously. The nasal fossæ were normal. No glandular enlargements.

It was evident that if removal were to be attempted three things were desirable, viz., to minimize hemorrhage, to exclude blood and discharge from the air passages, and rapidity of removal, which last would be greatly facilitated by adoption of the first two.

Accordingly, on January 16th, the external carotid artery was ligated on both sides, a tracheotomy tube inserted through the cricothyroid membrane, and the pharynx packed with a large sponge with string attached.

The upper lip was then split in the middle line and the growth extirpated by use of rongeur forceps. Venous oozing was considerable, but ceased as soon as the limits of the tumor were reached. No other form of hemorrhage occurred.

The portions of bone removed included the alveolar process of the right side as far back as the second molar tooth, the alveolar process of the left side as far as the first bicuspid tooth, and the contiguous portions of the hard palate of both sides as far back as the posterior third, thus leaving a bony bridge in that situation. Healthy bone was removed on all sides of the tumor, as indicated by its firm resistance to the biting of the forceps. The nasal fossæ were normal as well

as the antrum of the right side, which was necessarily opened from below.

The cavity was then packed and the lip sutured. The entire operation lasted about an hour and a half. The pharyngeal sponge was removed after a few hours. Recovery was uneventful. The tracheotomy tube was removed on the second day, the wound healing inside of a week. The incisions over the arteries closed by primary union.

The pathologist's report was that the tumor was a carcinoma, originating probably from the mucous membrane covering the gum; hence, strictly speaking, a *squamous-celled epithelioma*.

The patient's present condition is one of great comparative comfort. He eats and sleeps well and has gained considerable weight. There is very little falling in of the face, which can later be easily corrected by a plate. Cicatrization is not yet complete. There is at present no evidence of a recurrence, which, however, will probably take place, and this the patient understands.

My reasons for reporting this case are two: First, the rather unusual character of the growth, sarcoma being the common form of malignant epulis or tumor starting on the gum; and the second is to call attention to the great advantages secured in these operations by preliminary tracheotomy, packing the pharynx, and ligating the carotids—procedures which many operators regard at least as superfluous and unnecessary, but which, in this case at all events, would have been indispensable.

3. The case of *cholelithiasis* and *suppurative cholecystitis* was remarkable in that the patient, a woman, aged thirty-five years, gave no symptoms indicative of these conditions for a period of eight or ten weeks, during which time, however, she had marked jaundice and evening rise of temperature to between 101° and 102° F., clay-colored stools, etc. No local pain, nor tenderness, nor hyperleucocytosis were present.

She was finally transferred, October 22, 1900, to the surgical side (Bellevue Hospital) for an exploratory incision. This was performed, and a moderately distended gall-bladder was found and opened and nearly an ounce and a half of pus evacuated. Two stones were then extracted, and a third was found impacted in the neck of the bladder and extending to the junction of the cystic and hepatic ducts, the former, of course, being greatly distended. The stone was removed after some manipulation. The stones were about three-eighths of an inch in diameter. More pus followed the removal of the last stone, showing a state of suppuration of the bile-ducts. Cholecystostomy was performed and recovery was uneventful. Bacteriological examination of the pus showed the ordinary mixed pyogenic infection.

4. *Right Inguinal Hernia of the (a) Bladder*. This subject has attracted considerable attention during the past few years and the present case is reported on that account.

The patient, referred to me by Dr. McSweeney, of this city, was a male, aged fifty-seven years, and very stout. The tumor appeared four years before admission to the hospital, in September last, rather suddenly and from no apparent cause. It increased in size slowly but steadily. Complete reduction was impossible during the last three years, but increase in size just before and decrease in size just after micturition were noticed. These symptoms, of course, indicated the probable diagnosis, which was confirmed at the operation, which the patient came in for owing to increasing pain and discomfort.

The hernia was a large one and extended into the scrotum. When the sac was opened careful examination of the protruded portion showed it to be fully one-half of the bladder. Reduction was greatly facilitated by withdrawal of about six ounces of urine through a catheter introduced through the penis. Nothing abnormal was found as to the sac, the tunica vaginalis being intact. Closure of the wound; uneventful recovery.

*The hernia of the (b) cæcum* deserves a passing mention, owing to its rarity, and especially this case, as it was on the left side. The diagnosis was not made until the sac was opened, the symptoms having been those of a regular reducible inguinal hernia of good size, but with commencing pain, discomfort, and constipation. As the patient was not in first-class condition, no exploration was made to determine the exact condition of the mesocolon, etc., the part being at once returned and the wound closed. Recovery uneventful.

This must have been simply a congenitally too long ascending mesocolon, or a condition of *incomplete revolution* of the large intestine resulting in a mesially placed cæcum and ascending colon, the mesentery and small intestines lying over to the right of the vertebral column. Transposition of viscera was excluded by a careful examination after the operation.

Finally, in connection with these hernia cases, I should like to mention a method of operating which I have used during the past four or five years and with great satisfaction. Without claiming any especial originality for it, I have not seen it described anywhere. It is simply this:

A Bassini operation is done in all respects except that the aponeurosis of the external oblique is sutured *under* the cord instead of over it, this feature being the same as in Halsted's operation, and in my opinion lending additional strength to the abdominal wall, which is thus made solid, so to speak, under the cord.